

Download Spin Physics In Semiconductors

In 1971, together with V.I. Perel he has predicted new spin-related transport phenomena, one of which, now called the Spin Hall Effect, has become a subject of extensive experimental and theoretical studies. He was awarded the State Prize of USSR in 1973 and the Ioffe prize of the Russian Academy of Sciences in 1993. Covers the entire field of spin-related phenomena in semiconductors (both 2- and 3-dimensional) New edition, updated to include key findings made in the past 10 years Integrates the physics of transport phenomena and elementary magnetism in semiconductors This book describes beautiful optical and transport phenomena related to the electron and nuclear spins in semiconductors with emphasis on a clear presentation of the physics involved. Furthermore, it covers the entire field: bulk semiconductors, two-dimensional semiconductor structures, quantum dots, optical and electric effects, spin-related effects, electron-nuclei spin interactions, Spin Hall effect, spin torques, etc. Thanks to its self-contained style, the book is ideally suited for graduate students and researchers new to the field.